TEST REPORT

8605 SW Creekside Place
Beaverton, OR 97008
Phone: 503-466-2445 Fax: 503-466-1636

ZRT LABORATORY

 # D2021 01 11 002 SB

Ordering Provider:
Getuwell

Samples Received
01/11/2021

Report Date
01/11/2021

Samples Collected
Saliva - 01/06/21 05:00
Saliva - 01/06/21 11:30
Saliva - 01/06/21 17:00
Saliva - 01/06/21 21:30
Blood Spot - 01/06/21 05:00

Patient Name: Elite Athlete
Patient Phone Number: 555 555 5555

Gender	Height	Waist
Male	6 ft in	32 in
DOB	**Weight**	**BMI**
3/16/1991 (29 yrs)	170 lb	23.1

TEST NAME	RESULTS | 01/06/21	RANGE
Salivary Steroids		
Estradiol	2.0	0.5-2.2 pg/mL
Progesterone	11 L	12-100 pg/mL
Testosterone	93	44-148 pg/mL (Age Dependent)
DHEAS	3.2	2-23 ng/mL (Age Dependent)
Cortisol	3.7	3.7-9.5 ng/mL (morning)
Cortisol	1 L	1.2-3.0 ng/mL (noon)
Cortisol	0.6	0.6-1.9 ng/mL (evening)
Cortisol	0.4	0.4-1.0 ng/mL (night)
Blood Spot Thyroids		
Thyroglobulin	4	3-40 ng/mL (optimal 3-10)
Total T4	7.1	5-10.8 µg/dL
Free T4	1.2	0.7-2.5 ng/dL
Free T3	2.9	2.4-4.2 pg/mL
TSH	1.3	0.5-3.0 µU/mL
TPOab	1	0-150 IU/mL (70-150 borderline)
Blood Spot CardioMetabolic Markers		
Insulin	4	1-15 µIU/mL (optimal 2-6)
hsCRP	0.4	<3 mg/L

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The above results and comments are for informational purposes only and are not to be construed as medical advice. Please consult your healthcare practitioner for diagnosis and treatment.

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Laboratory Director

Alison McAllister, ND.
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TEST NAME	RESULTS | 01/06/21	RANGE
Blood Spot CardioMetabolic Markers		
Hemoglobin A1c	4.6	<6%
Triglycerides	123	<150 mg/dL
Cholesterol	153	<200 mg/dL
HDL	53	40 mg/dL or higher
LDL Cholesterol	75	<130 mg/dL (optimal <100)
VLDL	25	<30 mg/dL
Blood Spot		
LH	5.3	1.0-8.4 U/L (adult male)
Vitamin D, 25-OH, D2	<4	<4 if not supplementing (< 10 nmol/L)
Vitamin D, 25-OH, D3	25	20-80 ng/ml (50-200 nmol/L)
Vitamin D, 25-OH, Total	25	20-80 ng/ml (50-200 nmol/L)

<dl *= Less than the detectable limit of the lab.* ***N/A*** *= Not applicable; 1 or more values used in this calculation is less than the detectable limit.* ***H*** *= High.* ***L*** *= Low.*

Therapies

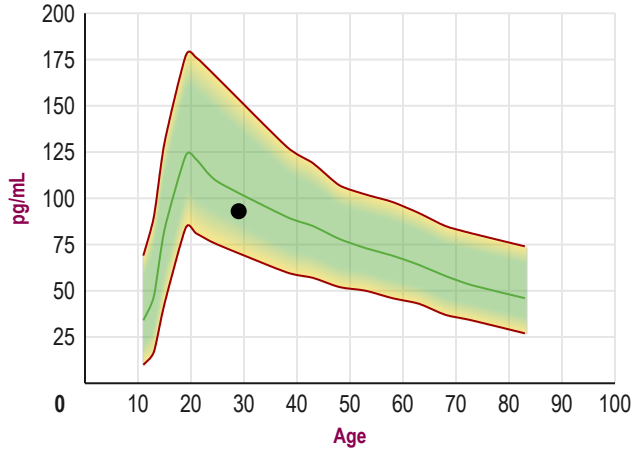
None

Graphs

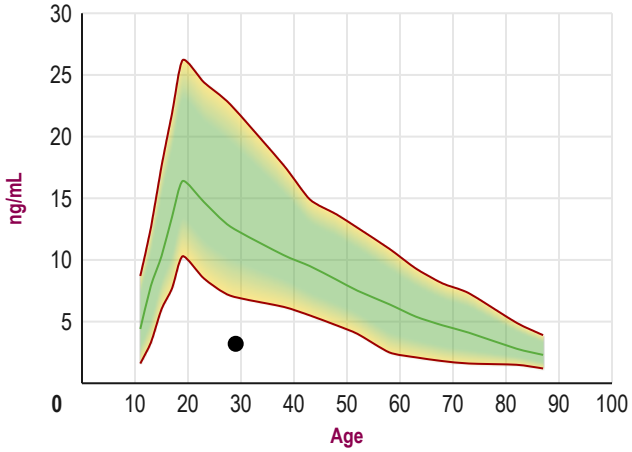
Disclaimer: Graphs below represent averages for healthy individuals not using hormones. Supplementation ranges may be higher. Please see supplementation ranges and lab comments if results are higher or lower than expected.

Average ▼▲ Off Graph

Saliva Testosterone



Saliva DHEAS



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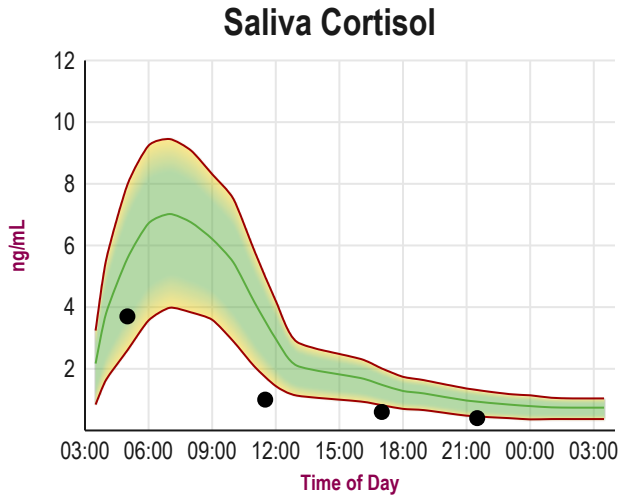

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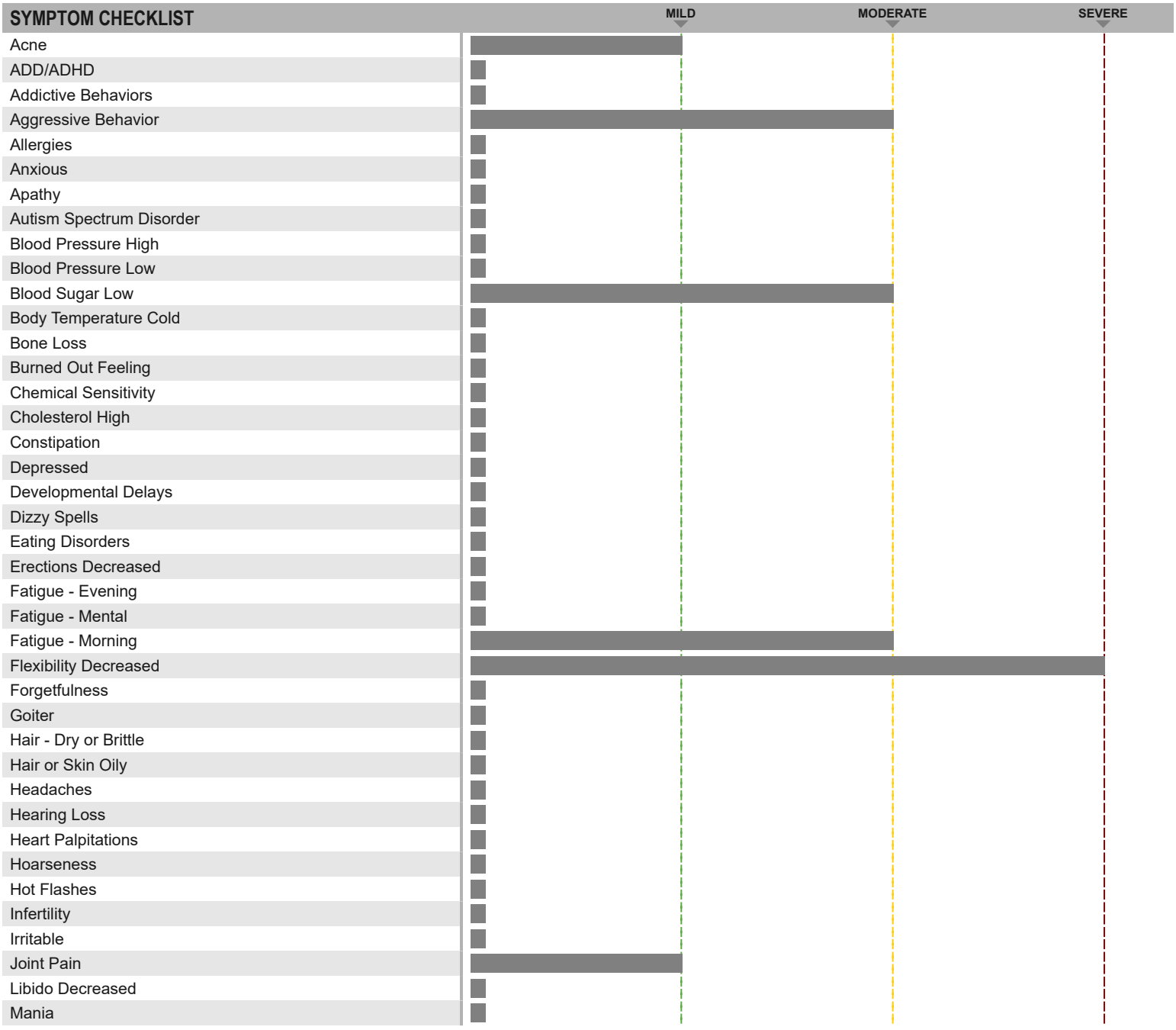
Disclaimer: Symptom Categories below show percent of symptoms self-reported by the patient compared to total available symptoms for each category. For detailed information on category breakdowns, go to www.zrtlab.com/patient-symptoms.

SYMPTOM CATEGORIES	RESULTS | 01/06/21
Estrogen / Progesterone Deficiency	0%
Estrogen Dominance / Progesterone Deficiency	0%
Low Androgens (DHEA/Testosterone)	15%
High Androgens (DHEA/Testosterone)	13%
Low Cortisol	15%
High Cortisol	1%
Hypometabolism	9%
Metabolic Syndrome	4%



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SYMPTOM CHECKLIST	MILD	MODERATE	SEVERE
Mental Sharpness Decreased			
Muscle Size Decreased			
Muscle Soreness			
Nails Breaking or Brittle			
Neck or Back Pain			
Nervous			
Night Sweats			
Numbness - Feet or Hands			
OCD			
Panic Attacks			
Prostate Cancer			
Prostate Problems			
Pulse Rate Slow			
Rapid Aging			
Rapid Heartbeat			
Ringing In Ears			
Skin Thinning			
Sleeping Difficulty			
Stamina Decreased			
Stress			
Sugar Cravings			
Sweating Decreased			
Swelling or Puffy Eyes/Face			
Triglycerides Elevated			
Urinary Urge Increased			
Urine Flow Decreased			
Weight Gain - Breast or Hips			
Weight Gain - Waist			

Lab Comments

Estradiol is within expected range for a male.

Progesterone is low, which is a common, benign issue in men. Progesterone may help to inhibit the conversion of androgens to estrogens as well as serve as a precursor for cortisol synthesis when cortisol levels are low. Progesterone is also a natural inhibitor of 5-alpha reductase, which converts testosterone into the more potent androgen, dihydrotestosterone (DHT) within target cells. Excessive levels of estrogens and DHT in combination are thought to play a role in stimulating the growth of prostate cancer cells. Because progesterone is an antagonist of both hormones it may have benefit in lowering risk for prostate cancer.

Testosterone is within mid-normal range. In healthy males from youth to middle age testosterone levels usually range from about 80-120 pg/ml. Healthy testosterone levels drop to about 60-80 pg/ml in men > 60 years of age. Supplementation with physiological amounts of androgens usually raises testosterone to levels seen in young men. Testosterone ranges are age specific. Normal age-dependent testosterone levels are usually associated with few symptoms of androgen deficiency, however, in some individuals with other hormonal problems (e.g. low IGF1, low thyroid, low or high cortisol) symptoms can be similar to androgen deficiency.

DHEAS is lower than the expected age range. Chronic low DHEAS may suggest HPA axis dysfunction, particularly if cortisol is also low and symptoms are indicative of low adrenal function. DHEAS is highest during the late teens to early twenties (10-20 ng/ml) and drops steadily with age to the lower end of range by age 70-80 (2-9 ng/ml). Mid-life DHEAS levels in both males and females are usually in the range of 5-8 ng/ml. Low DHEAS may contribute to low androgen symptoms (decreased libido, depression, fatigue, memory lapses, and/or bone loss), since DHEAS is a testosterone precursor. In individuals with very low DHEAS (< 2 ng/ml), DHEA supplementation in the 5-25 mg dosing range usually raises DHEAS to levels seen in mid-life.

Cortisol is fluctuating from low-normal to low throughout the day suggesting low cortisol output and HPA Axis dysfunction. HPA axis dysfunction is usually caused by stressors which include psychological stressors (emotional), hypoglycemia (low blood sugar), physical insults (pain or injury), exposure to toxic chemicals, and infections (bacteria, viruses and fungi). Acute situational stressors (e.g., anxiety over unresolved situations, school exams, travel, work-related problems, holiday season, etc.) can also cause a temporary adrenal exhaustion if adrenal reserves are low. Low cortisol can also exacerbate symptoms of low thyroid, since cortisol is essential for thyroid function at the tissue level. Healthy adrenal function and continued production of cortisol under normal non-stress situations, but particularly during stressors, is dependent on

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adequate sleep, proper diet (adequate protein-particularly problematic in vegetarians), sufficient nutrients (particularly vitamins C and B5), and cortisol precursors (pregnenolone and progesterone). For additional information on ways to help support adrenal gland function the following are recommended: "Adrenal Fatigue:", by James L. Wilson, ND, DC, PhD; "The Cortisol Connection", by Shawn Talbott, PhD; "The End of Stress As We Know It" by Bruce McEwen.

Thyroglobulin is within normal range. In contrast to urinary iodine, which provides information on the iodine status over the past 24 hr, thyroglobulin is considered a good marker of the average iodine status over the past few weeks or longer. Thyroglobulin levels in blood usually are inversely related to the iodine status; when urinary iodine levels are sufficient, thyroglobulin levels will usually be < 10 and > 3 ng/ml, and when iodine is insufficient thyroglobulin levels rise in the blood in response to higher TSH stimulating thyroglobulin synthesis in the thyroid gland in an attempt to increase thyroid hormone synthesis. Exceptions occur when TSH is low despite low thyroid hormone levels and when anti-thyroglobulin antibodies are present. Low TSH, despite low thyroid hormone levels, can result from high levels of glucocorticoids (e.g. endogenous cortisol caused by stressors or exogenous anti-inflammatory glucocorticoids) . Anti-thyroglobulin antibodies interfere with the thyroglobulin test, and can cause a false-low result. Individuals with Hashimoto's thyroditis (postive TPO antibodies), are very likely (50%) to also have antibodies to thyroglobulin, which would interfer with the thyroglobulin measurement, causing false low levels.

Total T4 is within observed range. While total T4 is a good marker of the thyroid glands ability to synthesize thyroid hormones (assuming no thyroid hormone therapy), it is not refective of the bioavailable fraction of T4 available to target tissues throughout the body. Free T4 and free T3 are a better estimation of the bioavailable thyroid hormones. If symptoms of thyroid deficiency are problematic and other thyroid hormone markers are out of balance (e.g. low free T4, low free T3, high TSH, and/or high thyroglobulin), consider thyroid hormone therapy.

Thyroid hormones (TSH, free T4, and free T3) and thyroid peroxidase antibodies (TPO) are within normal ranges and symptoms of thyroid imbalance are minimal.

Fasting insulin is within normal range, however, this does not rule out insulin resistance and predisposition to diabetes if fasting glucose is elevated and symptoms/signs of insulin resistance are problematic (e.g. obesity, excessive weight gain in the waist, elevated triglycerides and HbA1C, blood sugar dysregulation, etc.).

High Sensitivity C-Reactive Protein (hs-CRP) is within normal range (< 3 mg/L). Elevated hs-CRP is a marker of inflammation and contributor to pro-inflammatory and pro-thrombotic elements of cardiovascular disease risk.

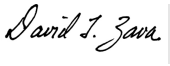
Hemoglobin A1c (HbA1c) is within range. HbA1c is a measure of red blood cell hemoglobin glycation and reflects the average blood glucose for the previous 3 months. The American Diabetic Association recommends the following HbA1c levels: normal if it is <5.7%, prediabetes 5.7%-6.4%, and diabetic >6.5%.

Blood lipids (triglycerides, total cholesterol, HDL-cholesterol, LDL-cholesterol) are within ranges considered as low risk for cardiovascular disease, stroke, and diabetes. For additional information see http://en.wikipedia.org/wiki/Cholesterol

LH is within expected range.

Vitamin D is lower than considered sufficient. Vitamin D levels are considered insufficient between 20-30 ng/ml and sufficient between 30-80 ng/ml. While optimal levels are still being researched, the Endocrine society recommends keeping levels above >30 ng/ml. Other researchers have suggested that vitamin D levels are optimal between 50-80 ng/ml.

Vitamin D deficiency has been closely associated with a wide range of conditions and diseases, which include cardiovascular disease, stroke, osteoporosis, osteomalacia, cancer, and autoimmune diseases such as multiple sclerosis, rheumatoid arthritis, and diabetes (types 1 and 2) (for review see: Holick MF. NEJM 357: 266-281, 2007). Lack of adequate sunlight resulting from geographical location (northern climates), excessive clothing, working indoors during daylight hours, purposely avoiding sunlight with clothing and sunscreens, and aging of the skin contribute to low vitamin D levels. Vitamin D3 may be increased by eating foods high in D3 (fish), exposing the skin to sunshine without sunscreen during mid-day for 15-20min (latitudes below Boston, MA), use of a UVB light, and/or supplementation with Vitamin D3.



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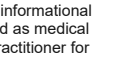

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